FIG. 1

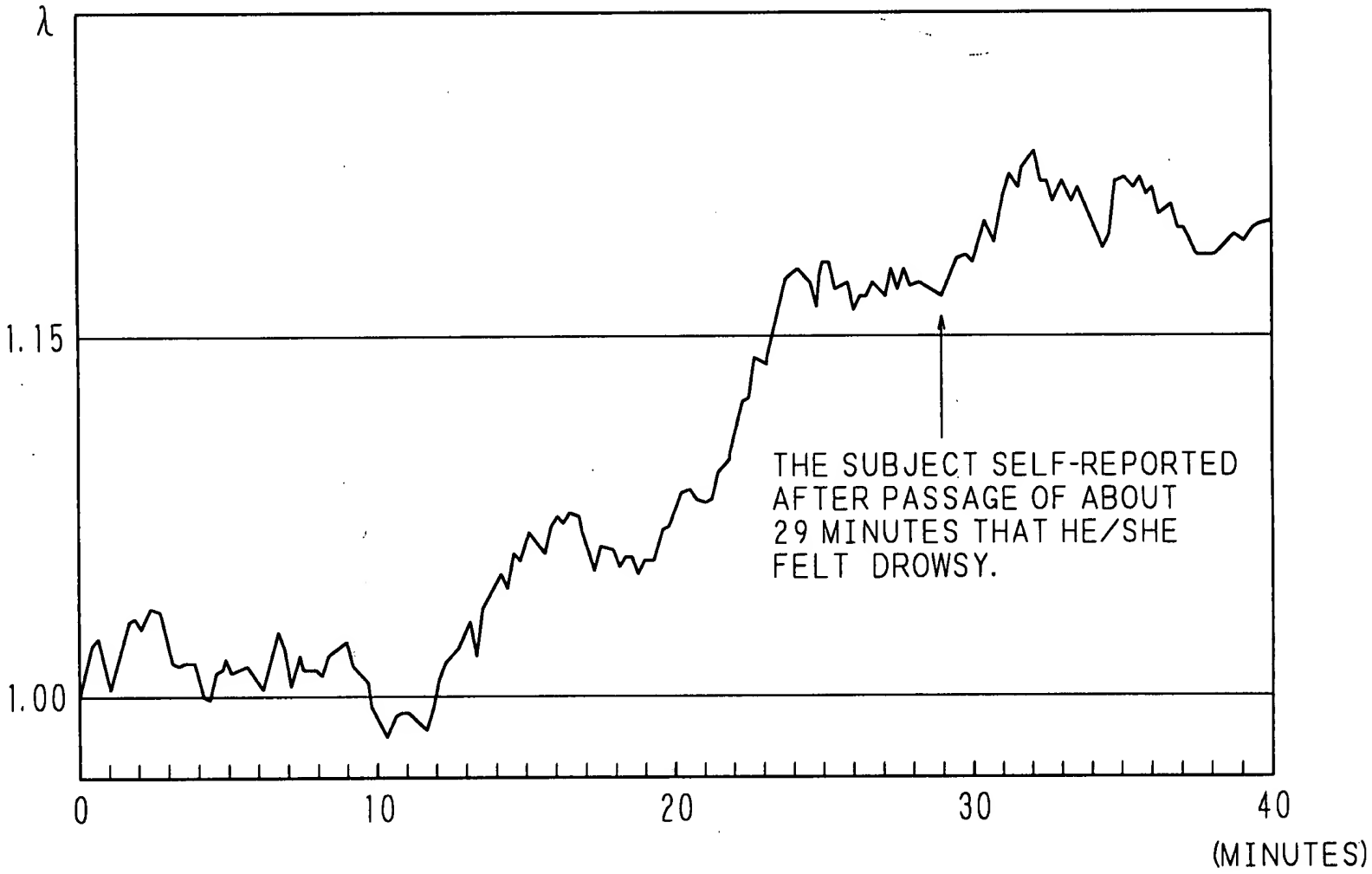

λ
1.15
1.00
0
10
20
30
40
(MINUTES)
THE SUBJECT SELF-REPORTED AFTER PASSAGE OF ABOUT 29 MINUTES THAT HE/SHE FELT DROWSY.

FIG. 2

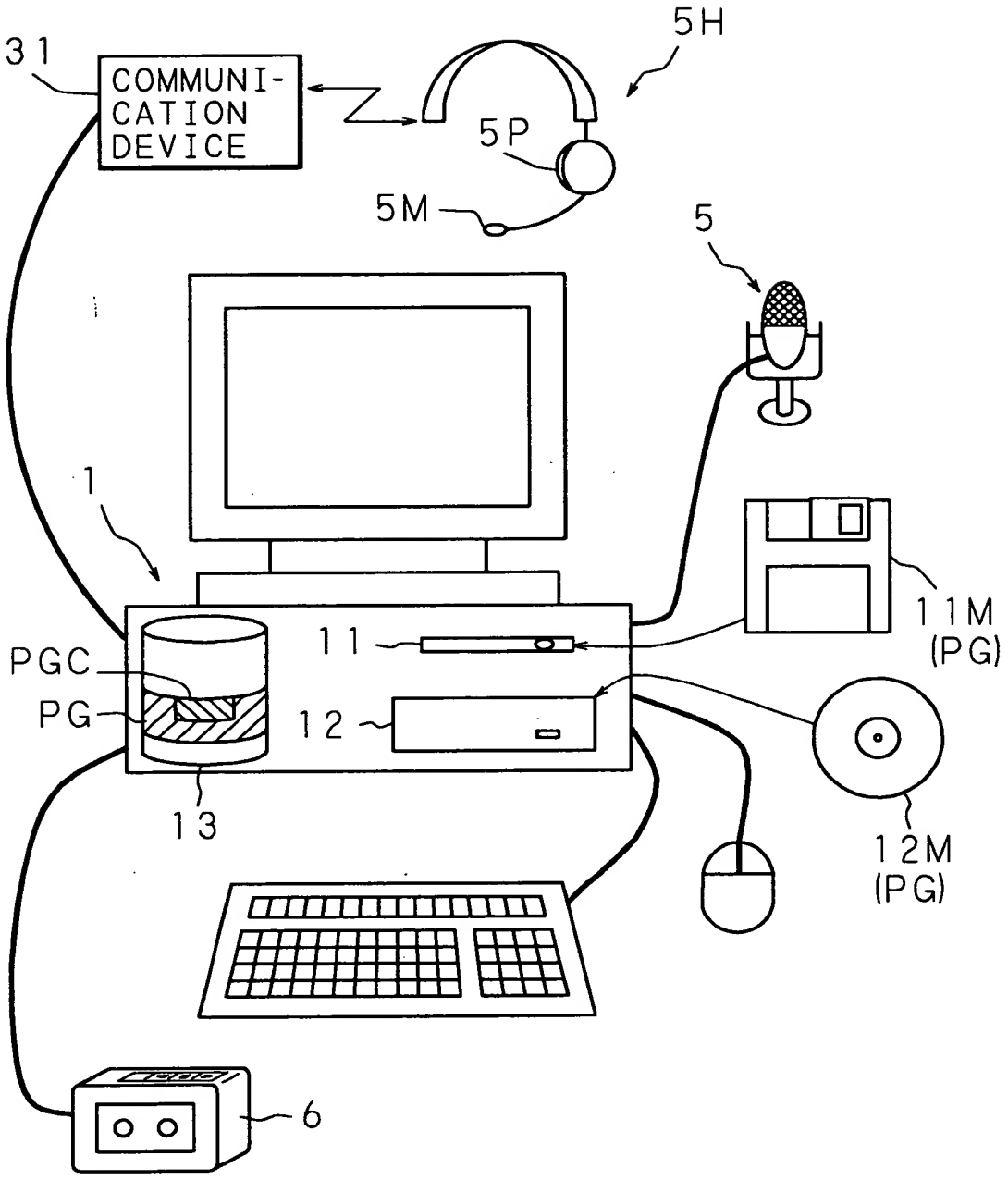

31
COMMUNI-
CATION
DEVICE
5H
5P
5M
5
1
11M
(PG)
PGC
PG
11
12
13
12M
(PG)
6

FIG. 3

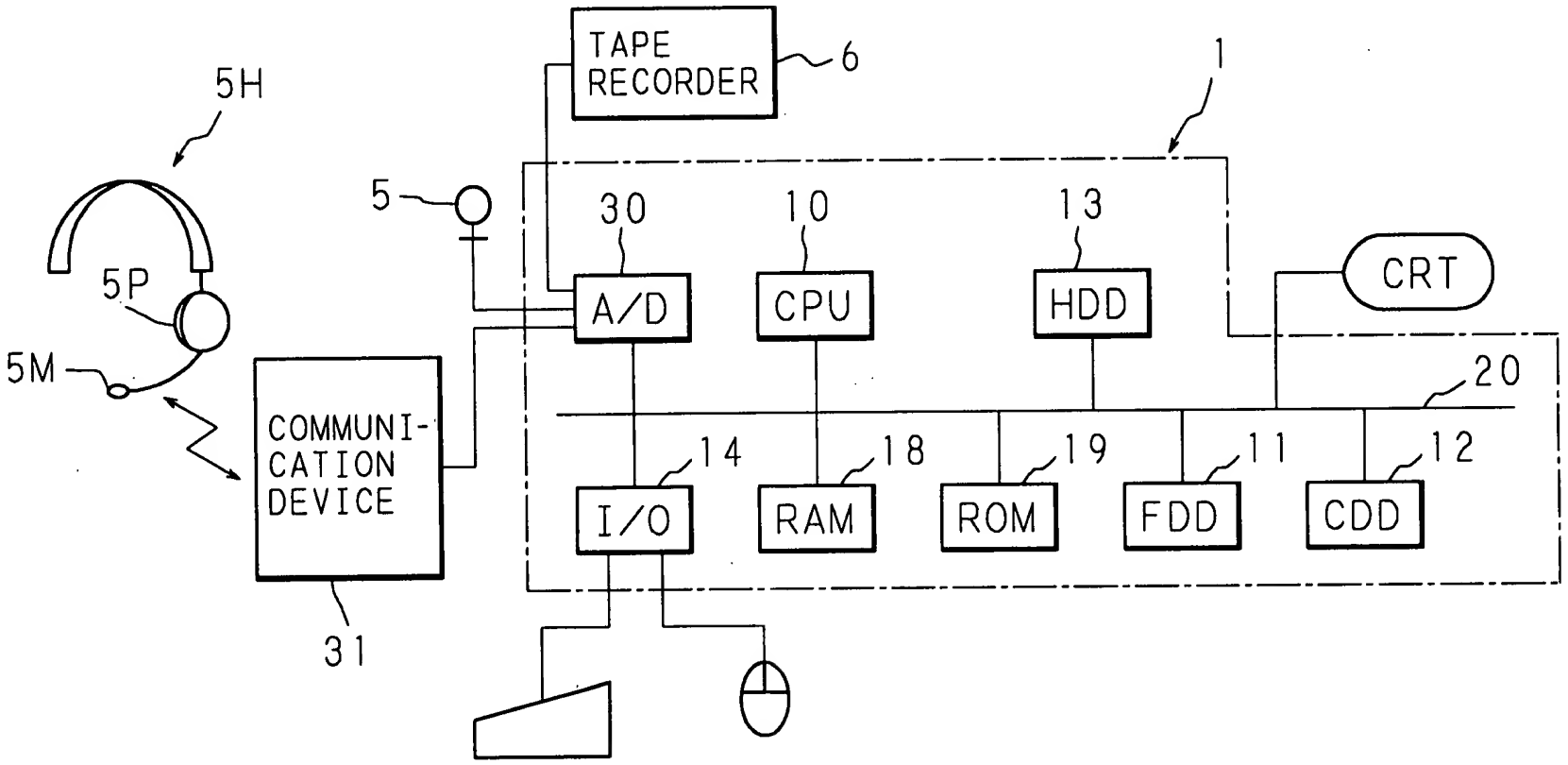
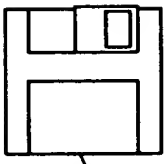

TAPE RECORDER
6
1
5H
5
30
10
13
CRT
5P
A/D
CPU
HDD
5M
20
COMMUNI-CATION DEVICE
14
18
19
11
12
I/O
RAM
ROM
FDD
CDD
31

FIG. 4

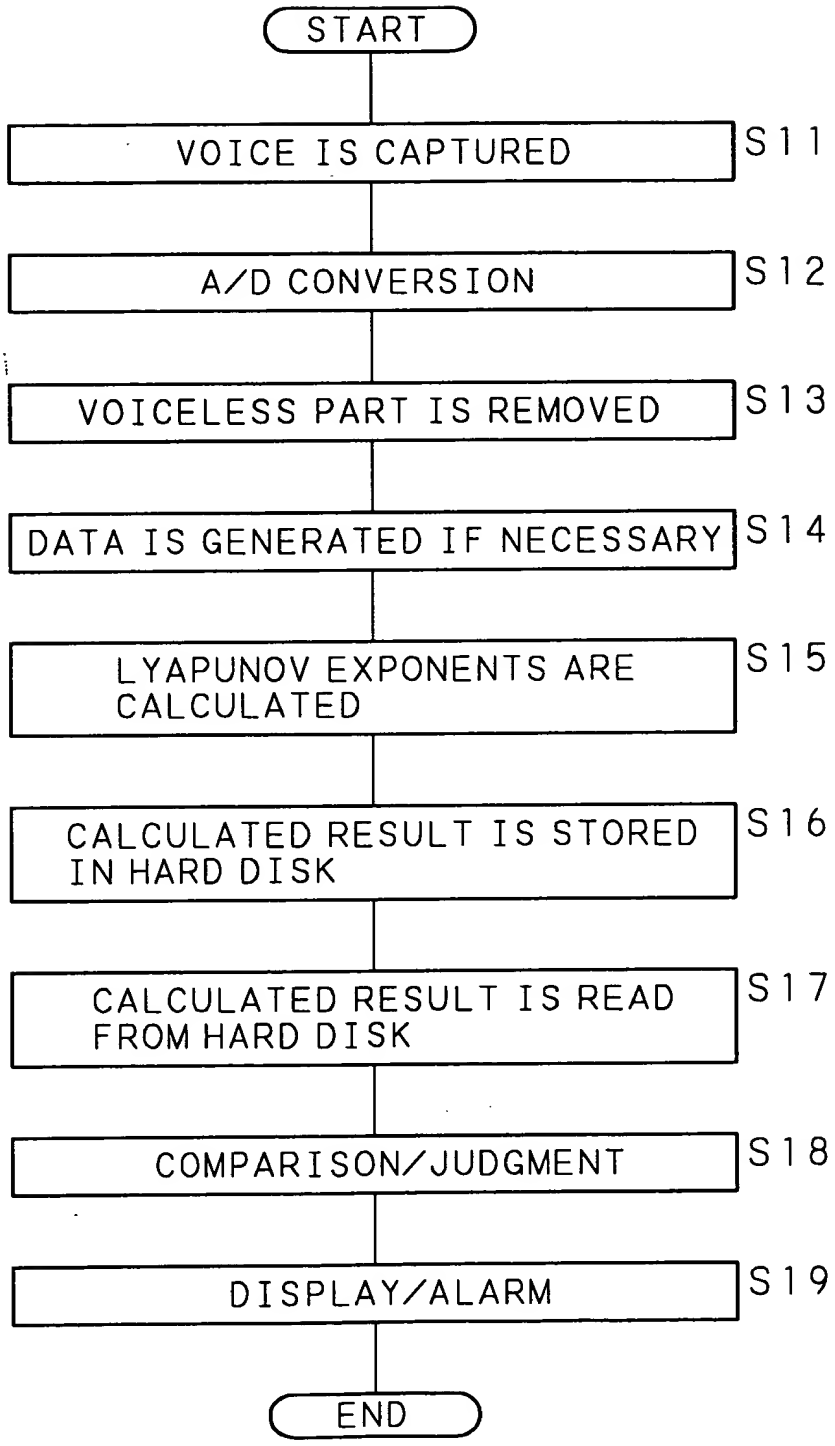


11M

PC13: TO REMOVE A VOICELESS PART FROM DATA
PC14: TO GENERATE DATA, IF NECESSARY
PC15: TO CALCULATE LYAPUNOV EXPONENTS BY CHAOS ANALYSIS OF DIGITAL DATA (CHAOS ANALYSIS PROCESS)
PC16: TO STORE CALCULATION RESULTS OF LYAPUNOV EXPONENTS IN HDD 13 OR RAM 18
PC17: TO READ LYAPUNOV EXPONENTS STORED IN HDD 13 OR RAM 18
PC18: TO DETERMINE FATIGUE LEVEL AND/OR DOZING STATE BY COMPARING LYAPUNOV EXPONENTS OF VOICES UTTERED AT DIFFERENT POINTS OF TIME
PC19: TO GIVE ALARM ACCORDING TO RESULT OF DETERMINATION

0050740

FIG. 5



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